

Weckenmann Anlagentechnik GmbH+Co.KG, 72358 Dormettingen, Germany

Highly dynamic, 3rd-Generation Shuttering Robot

Weckenmann Anlagentechnik GmbH & Co. KG, the Swabian family-owned company, is among the most innovative and thus leading companies in the precast concrete element industry. These plant manufacturer developed the first shuttering robot for automated handling of formwork profiles and magnets in 1992. Very diverse versions of the shuttering robots have proven themselves since then and they remain a Weckenmann speciality. 25 years after presentation of the first robot generation, Weckenmann now introduces the highly dynamic, 3rd-generation of shuttering robots.

For many years, precast concrete companies all over the world have relied on the precise, versatile Weckenmann shuttering robots in their automated production. Approximately 200 different robot and magazines systems are in use worldwide.

Efficient, error-free shuttering are among the primary tasks of Weckenmann robot systems. In addition, the formwork profiles can be managed by the robot in combination with a formwork magazine and a shuttering transport system, which is importance, especially in the production of solid parts with a large variety of shuttering. Last, but not least, an optimal flow of shuttering material from the removal to the shuttering area is assured for circulation plants.

The requirements of precast concrete companies have continued to develop since the invention and initial start-up approximately 25 years ago. Adaptation of robot technology to the respective requirements has been a constant challenge for Weckenmann Anlagentechnik. The increasing complexity of tasks in the past, such as the placing of diverse shuttering systems and even built-in components, required constant further development of Weckenmann robot systems.

Increased productivity thanks to the latest generation of robots

Last year, Weckenmann brought the 3rd generation of robots or storage systems to market. The new technology is already being used successfully in various plants. The new development is the response to the increased requirements of customers. This required further development of existing robot and storage systems. Today's precast plants must also struggle with greater shuttering weights and more complex shut-

tering systems. The concentration of many tasks at a single workstation also presents an additional challenge. In the process, the plant must ensure faster traverse speeds for a greater workload within the same cycle times and thus increased productivity with greater placement accuracy. The latest generation of shuttering robots meets all of these increased requirements.

3rd shuttering robot generation

The demoulding and shuttering of pallets is carried out by the shuttering robot, which requires high dynamics. This can only be achieved by a highly dynamic system like the new robot generation from Weckenmann. Rationalisation processes in existing plants can be revealed and implemented with the aid of robots.

For demoulding, the robot scans the formwork surface and releases the magnetic connections of the formwork profiles to be removed. It then places them on the formliner that continues in the direction of the magazine or shuttering robot. Corresponding short cycle times are enabled in the interplay with sophisticated storage technology. The robot takes the formwork profiles from the shuttering transport and either passes it to the shuttering robot or stores the formwork in the magazine or swaps it.



Shuttering robot at Keegan Precast Ltd.

The advantages of Weckenmann shuttering robots at a glance:

- Minimal approach dimensions of the different axis systems results in space savings in the precast concrete plant
- Rack and pinion drive with highly dynamic servo drive technology
- Heavy-duty, linear guides with robust profiles
- High acceleration and speed on all axes
- Low-maintenance components

New-generation robot in use at Keegan Precast Ltd, Ireland and elsewhere

Keegan Precast, the Irish precast element manufacturer, has placed a new circulation plant on a green field site alongside the circulation plant that has been in operation since 2005 in Trammon, Rathmolyon. The plant was entirely built by Weckenmann and includes a fully automatic shuttering robot for double wall/ precast slab with in-situ topping and solid wall shuttering.

The robot receives its optimized production data from Weckenmann's own Wavision master computer system, which covers the basic functions of a modern master computer system. The result is defect-free and highly efficient production of precast concrete elements. ■

FURTHER INFORMATION



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